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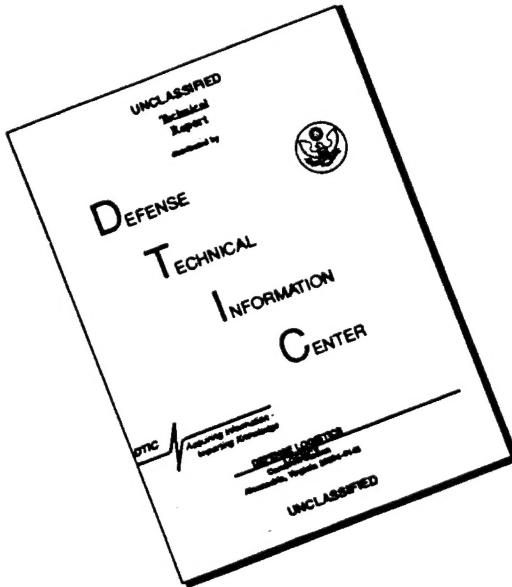
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AN ASSESSMENT OF PATIENT SATISFACTION
AT
KIMBROUGH ARMY COMMUNITY HOSPITAL
FORT GEORGE G. MEADE, MARYLAND

Graduate Management Project
Submitted to the Faculty of
Baylor University
In Partial Fulfillment of the
Requirements for the Degree
of
Master of Health Care Administration
by
Captain Marsha B. Patrick, MS

May 1995

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ACKNOWLEDGMENTS

My special thanks to the survey participants for taking the time and effort to give us their thoughts about the health care they have received at Kimbrough Army Community Hospital. I would also like to thank the staff of Kimbrough for assisting me in conducting this study and Dr. A. David Mangelsdorff for his help in designing this project.

ABSTRACT

The health care industry is not exempt from satisfying its customers. The abundance of managed care programs and increased competition between providers of health care has led to an emphasis on measuring customer satisfaction with all aspects of health care delivery.

The management problem addressed in this study is measuring the satisfaction of the actual users of outpatient services at Kimbrough Army Community Hospital. Managed care shifts the focus of health care delivery from the inpatient setting to the outpatient setting. Therefore, in order to remain competitive in managed care initiatives, Kimbrough needs to ensure they are providing care to beneficiaries that is in line with the needs and expectations of those beneficiaries.

A mail-out, patient satisfaction survey was developed with items on eight major dimensions of patient satisfaction and overall satisfaction, as well as questions to obtain demographic and utilization information. Statistical analysis revealed that overall, respondents were moderately satisfied. Respondents had the most positive attitudes toward the physical environment of Kimbrough and the level of interpersonal care given by health care providers and staff. The dimensions most related to overall satisfaction in this study were outcomes and interpersonal care.

TABLE OF CONTENTS

ACKNOWLEDGMENTS -----	i
ABSTRACT -----	ii
TABLE OF CONTENTS -----	iii
LIST OF TABLES -----	iv
LIST OF FIGURES -----	v
CHAPTER 1. INTRODUCTION -----	1
Conditions Which Prompted the Study -----	2
Statement of the Problem -----	3
Literature Review -----	4
Purpose -----	13
CHAPTER 2. METHODS AND PROCEDURES -----	15
The Survey -----	15
The Sample -----	18
Statistical Methods -----	19
CHAPTER 3. THE RESULTS -----	21
Return Rate -----	21
Demographics -----	23
Utilization -----	25
Descriptive Statistics -----	29
Reliability -----	38
Correlations -----	41
Statistical Significance -----	42
CHAPTER 4. DISCUSSION -----	45
The Findings -----	45
The Survey -----	47
CHAPTER 5. CONCLUSIONS AND RECOMMENDATIONS -----	50
REFERENCE LIST -----	53
APPENDIX. PATIENT SATISFACTION SURVEY -----	56

LIST OF TABLES

TABLE 1. SAMPLE DEMOGRAPHIC CHARACTERISTICS -----	24
TABLE 2. SAMPLE UTILIZATION CHARACTERISTICS -----	26
TABLE 3. UTILIZATION OF NEW SERVICES -----	29
TABLE 4. DESCRIPTIVE DATA FOR DEPENDENT AND INDEPENDENT VARIABLES -----	31
TABLE 5. DEPENDENT AND INDEPENDENT VARIABLES RESPONSE CATEGORY PERCENTAGES -----	34
TABLE 6. FREQUENCY OF CATEGORICAL RESPONSES TO OPEN-ENDED QUESTIONS -----	37
TABLE 7. INTER-ITEM CORRELATIONS FOR INDEPENDENT VARIABLES -----	39
TABLE 8. CORRELATIONS WITH OVERALL SATISFACTION -----	42
TABLE 9. ANALYSIS OF VARIANCE -----	43

LIST OF FIGURES

FIGURE 1. RESPONDENT COMPOSITION
BY BENEFICIARY CATEGORY ----- 22

FIGURE 2. RESPONDENT COMPOSITION
BY GENDER ----- 22

CHAPTER 1

INTRODUCTION

The health care industry is not exempt from satisfying its customers. The abundance of managed care programs and increased competition between providers of health care has led to an emphasis on measuring customer satisfaction with all aspects of health care delivery. New and improved definitions of quality are focusing on customers and their perceptions of quality health care. Managers and leaders are looking to the theories of Deming, Juran and Donabedian as the total quality management (TQM) philosophy and pursuit of constant quality improvement permeate the health care industry. As written by Donabedian: "patient satisfaction may be considered to be one of the desired outcomes of care, even an element in health status itself," and "information about patient satisfaction should be as indispensable to assessments of quality as to the design and management of health care systems" (Donabedian 1988).

The Joint Commission on Accreditation of Healthcare Organizations (JCAHO) is emphasizing the use of customer feedback to assist in evaluating the quality of care delivered by a facility and for use in the strategic planning process. Health care facilities seeking accreditation through JCAHO must show how

they gather customer input and how they put that information to use in improving organizational processes (JCAHO Manual 1995).

In addition to JCAHO requirements, Congress has shown interest in monitoring patient satisfaction with the Military Health Services System. In 1992, Congress directed the Department of Defense (DoD) to conduct an annual health care survey of all military beneficiaries. According to the Assistant Secretary of Defense for Health Affairs, the data collected through the survey would "provide valuable information for regional planning and delivery of health care." The survey would also help answer questions such as: "What types of beneficiaries rely on the military treatment facility for care; how many have private insurance; and how satisfied are these individuals with their care?" (Joseph 1994). A tri-service working group created the Annual Health Care Survey of DoD Beneficiaries that would be administered in the fall of 1994.

Conditions Which Prompted the Study

Management is extremely concerned with the number of negative comments about the care at Kimbrough Army Community Hospital (Eden 1994). Currently, Kimbrough has a very reactive mechanism in place to track patient complaints and compliments only when the patient is moved enough to seek out the patient representative with their comments. There is no proactive

mechanism to actively survey patients' perceptions of the health care they receive at Kimbrough Army Community Hospital.

In the past few years, Kimbrough Army Community Hospital has created a number of programs designed to improve the patient care process and hopefully improve the patient's perception of the care they receive. The facility needs a comprehensive tool to measure the impact of the various programs and to project what areas need additional attention. One way to gather information on how patients perceive their health care is to implement a patient satisfaction survey. Additionally, the JCAHO survey team is visiting Kimbrough Army Community Hospital in September 1995, and will be looking for tools that allow customers to give feedback on their care. Right now, Kimbrough lacks a tool that provides meaningful data to be analyzed for decision making.

Statement of the Problem

The management problem addressed in this study is measuring the satisfaction of the actual users of outpatient services at Kimbrough Army Community Hospital. Managed care shifts the focus of health care delivery from the inpatient setting to the outpatient setting. Therefore, in order to remain competitive in managed care initiatives, Kimbrough needs to ensure they are providing care to beneficiaries that is in line with the needs and expectations of those beneficiaries. A patient satisfaction

survey will summarize what Kimbrough is doing right and what it could be doing to better serve the beneficiaries.

Literature Review

Health care executives and providers have implemented patient satisfaction surveys for decades. This literature review focuses on three major categories: customers (who are they, why are they important, what are their needs and expectations in the health care environment, why is patient satisfaction data important); measuring customer satisfaction (determinants of patient satisfaction, developing survey instruments, reliability and validity); and types of survey instruments used in the DoD (their significant findings and utility of results).

Customers

Patients are only one of the categories of customers in the health care environment, but they are perhaps the most important in determining a health care facility's viability. Tenner developed a model in the book Total Quality Management for determining customer expectations. A reactive approach of responding to customer complaints yields minimal customer understanding. Customer service desks, hotlines and customer representatives lead to higher levels of customer understanding. In order to achieve full understanding of customers and their needs, the author suggests a more proactive approach using

specifically designed surveys, personal interviews and focus groups to discuss customer-related issues (Tenner as documented in Kelly-Heidenthal 1994). In the words of Kelly-Heidenthal: "It is only by understanding your customers' expectations and needs that you can improve your ability to deliver high-quality, cost-effective care." (Kelly-Heidenthal 1994, 4).

Determining customers' needs is not an easy process. As stated by Juran: "Customers' needs are a moving target" (Juran 1992, 115). What does the customer need that brings them to the health care system? One author had an interesting perspective:

"there is not a root need on the part of society to visit doctors' offices. Nor is there a root need to lie down in hospital beds. . . .

It seems to me that one need is prediction of the future. Sorcerers, bone throwers, and modern doctors all try to answer the patient's question -- What's going to happen to me? Another need is relief of pain and suffering. Yet another basic need is for answers to questions" (Reinertsen 1994, 40).

None of these needs depend on the technical expertise of the doctor.

As Juran points out, "customers understandably state their needs based on their perceptions" (Juran 1992, 74). It is not just the technical quality of health care or the actual outcome of health care that influences a patient's satisfaction with their health care. The customer's perception of what health care they need could be anything and it is important for the supplier, in this case the health care provider, to be sensitive to

customer perceptions when delivering the product, health care. An example of how perceptions play a role in customer decision making occurs in the manufacturing industry where customers will pay more for a product that is packaged nicely than for a product that is packaged cheaply (Juran 1992, 75, 76).

According to Juran, the process for determining the needs of the customer encompasses four areas:

- being a customer
- studying customer behavior
- communicating with customers, and
- simulating customer use (Juran 1992, 88).

One way of collecting information to study customer behavior while determining their needs is the questionnaire (Juran 1992, 94).

Determining the satisfaction and dissatisfaction of patients is not only valuable to an organization economically, but also for evaluating the quality of health care delivery. Donabedian (1988) describes a three-part model that addresses the importance of patient satisfaction in evaluating quality health care.

First, patient satisfaction as an aspect of well-being can be considered an outcome of health care. Secondly, satisfaction can be a contribution to health care because "a satisfied patient is more likely to cooperate in the implementation of care and to do so more effectively." Lastly, Donabedian states "satisfaction or

7

dissatisfaction reflects the patient's judgment on all aspects of care, including the technical process, the interpersonal process, and the outcomes of care, as well as the structural attributes of the settings in which care is provided" (Donabedian 1988, 180).

Measuring Satisfaction

Many of the current patient satisfaction studies partition surveys into measurements of satisfaction for structure, process and outcome aspects of health care which aligns with the major components of quality. Donabedian recommends covering all three aspects of quality in patient satisfaction surveys rather than concentrating on just health care outcomes or the health care process (Donabedian 1988).

The reliability and validity of survey instruments are often debated. According to a literature review conducted by Rubin, few studies report the reliability of assessment instruments (Rubin 1990). Even fewer studies have tested the validity of survey instruments by comparing patient ratings with the actual care delivered through ratings given by other care providers, family members, or the medical documentation of outcomes (Rubin 1990). One author recommends the use of open-ended questions with pre-coded questions to check for the validity of responses, although she admits the task of checking the validity against open-ended questions would be time consuming (Bowling 1992, 33).

Another article discussed the arguments over the validity of customer ratings. Even though the opponents of using customer ratings to evaluate quality believe patients do not provide valid information, these authors show (1) patients' assessments of quality in health care predict their behavior in the health care marketplace; (2) patients do not have to be experts to accurately judge quality; (3) data collected through patient surveys are less expensive than other data sources for assessing quality; and (4) data from the patients often contains additional information that is not available from any other source because of incomplete records and inadequate complaint systems (Davies and Ware 1988). Additionally, these authors emphasized that "data from consumers undoubtedly represent the centerpiece of any effort to examine the interpersonal component of quality" (Davies and Ware 1988, 45). The move to using patient perception data to evaluate the quality of health care is becoming more widespread among health care facilities (Dull, Lansky and Davis 1994; Boscarino 1992; Nelson and Niederberger 1990; Matulich and Finn 1989; Davies and Ware 1988).

The possibility of bias affecting the results of patient evaluations is also a consideration. Rubin found no reports of significant bias between three different modes of surveying--telephone, interview, and self-administered. Some authors did find personal contact before administering the survey increased

the response rate. At least one author found a lowered response rate with increasing time from the delivery of care (Rubin 1990). To avoid acquiescence response bias, some authors found "excellent-poor" rating scales more reliable than agree-disagree or satisfied-not satisfied scales (Rubin 1990).

The literature also describes the factors that contribute to patient satisfaction with health care. Researchers have organized these factors into several categories often referred to as the determinants of patient satisfaction. Weiss and Ramsey (1989) classified four major determinants of patient satisfaction:

- Patient characteristics, including sociodemographic characteristics, expectations of the medical encounter, and health status;
- Provider characteristics, including personality traits and the "art" and "technical quality" of care provided;
- Aspects of the physician/patient relationship, including the clarity and completeness of communication between patient and provider and the "outcome" of the encounter; and
- Structural and setting factors, including the accessibility of provider, mode of payment, and whether or not there has been an ongoing relationship between provider and patient (Weiss and Ramsey 1989, 180).

Ware, Davies-Avery and Stewart (1978) discussed eight major dimensions of patient satisfaction in their review of the literature: art of care, technical quality of care, accessibility/convenience, finances, physical environment, availability, continuity, and efficacy/outcomes of care. They

based their taxonomy of patient satisfaction mostly on logic since few studies were available on the relationships between the constructs. They proposed this taxonomy be used to "judge the comprehensiveness of a given questionnaire" (Ware, Davis-Avery and Stewart 1978, 3).

Matulich and Finn found several studies conducted in the late 1980s that concluded "the most important determinants of patient satisfaction with regard to selection of health care facilities were related to the amount of TLC (tender loving care) demonstrated by the health care provider." The aspects of TLC included explanation of procedures, personal attention to the patient, interest in the patient as a person, courtesy and interpersonal skills of the entire staff (Matulich and Finn 1989, 46).

There are a wide variety of surveys that have been used to gather patient satisfaction data. Nelson developed the Patient Comment Card which elicits qualitative comments as well as quantitative information from patients (Nelson, Larson, Davies, Gustafson, Ferreira and Ware, Jr. 1991). Surveys can be brief or comprehensive, and vary in style from machine-read, fill-in-the-bubble questionnaires to a list of open-ended questions. Nelson explains the importance of knowing your goal prior to gathering feedback. A brief questionnaire would be appropriate if the organization wanted to offer the patient a chance to express

11

their opinions. A more comprehensive survey would be appropriate when the information would be used for decision making and allocating resources for improvements in quality. Nelson also recommends a follow-up system to improve response rates (Nelson, Larson, Davies, Gustafson, Ferreira and Ware, Jr. 1991).

According to Nelson, "effective use of quality measures starts with top leaders who understand who their customers are, what their customers need, and how processes need to work to efficiently match services with needs." Satisfaction and dissatisfaction data can be an effective tool to encourage staff to analyze their processes and outcomes for potential quality improvements. Feedback from patient satisfaction surveys can be a great motivator for change in the way employees treat their customers (Nelson, Larson, Davies, Gustafson, Ferreira and Ware, Jr. 1991, 284).

DoD Surveys

Complaints about the military health care system have spawned patient satisfaction surveys from the individual clinic level to the Department of Defense level. A survey conducted by the General Accounting Office in the late 1980s found that overall, patients were satisfied with the care they received in military treatment facilities. However, over half of the outpatient respondents had negative comments on some element of

12

their care including "Rude or Impersonal Staff", "Staff Perceived as Incompetent", and "Too Few Appointments Available" (GAO Report 1989).

A patient satisfaction survey conducted by Dr. A. David Mangelsdorff in 1991-1992, was consistent with the GAO Report and previous surveys of military beneficiaries in 1989-1990 and 1990-1991, finding that patients are generally satisfied with the overall care they receive in a military treatment facility (Mangelsdorff, Twist, Zucker, Ware and George 1992).

A survey conducted by Captain Kristin S. Pettigrew at Kimbrough Army Community Hospital in 1993, found that the variable most related to satisfaction was the competence of the health care provider as perceived by the patient. The other variable significantly related to satisfaction with overall care was the amount of courtesy and respect shown to the patient during the health care treatment (Pettigrew 1993).

Mangelsdorff's study and the GAO Report found patients had high levels of overall satisfaction with the interpersonal care, communication, and courtesy at the military treatment facility (Mangelsdorff, Twist, Zucker, Ware and George 1992; GAO Report 1989).

The Annual Health Care Survey of DoD Beneficiaries was recently developed in response to a directive from the Assistant Secretary of Defense. The DoD survey is directed to all DoD

beneficiaries whether they use military or civilian treatment facilities, and contains specific questions that apply to actual users of military treatment facilities. Once the DoD survey is administered this year, data will be available to compare all the beneficiaries in Kimbrough's catchment area to beneficiaries that actually use Kimbrough, further enhancing the information used by Kimbrough to make decisions.

Purpose

The purpose of this study was to measure the satisfaction of patients who use the outpatient services at Kimbrough Army Community Hospital in order to provide information for decision making and planning managed care initiatives. Although a number of factors contribute to patient satisfaction, this study concentrated on examining the relationships between overall satisfaction and the eight major dimensions of patient satisfaction (access, physical environment of facility, finances, interpersonal care, communications, choice and continuity, technical quality, and outcomes), along with the relationships between overall satisfaction and the beneficiary categories of the respondents.

Each variable representing one of the eight major dimensions of patient satisfaction was an aggregate measure of the individual items, or survey questions, within that dimension.

The variable representing overall satisfaction was also an aggregate measure of questions pertaining to satisfaction. The beneficiary category variables represented the presence of each beneficiary category attribute.

CHAPTER 2

METHODS AND PROCEDURES

The Survey

The survey instrument used in this study was adapted from existing surveys because of their demonstrated reliability and validity. Portions of these surveys have been tested by the Group Health Association of America (GHAA), Dr. A. David Mangelsdorff in his survey of Department of the Army beneficiaries in 1989-1991, and Major Dorothy A. Smith in her survey of outpatient users of Tripler Army Medical Center, Hawaii, in 1993. The survey instrument layout was modeled after the instrument used by Major Smith (Smith 1993).

The 62-question patient satisfaction survey contained five questions on global satisfaction with health care received at Kimbrough, several questions to obtain demographic and utilization data, and sections of questions covering the eight major dimensions of patient satisfaction. These eight dimensions are similar to the dimensions described by Ware in the literature (Ware, Davies-Avery and Stewart 1978): Access, physical environment of facility, finances, interpersonal care, communications, choice and continuity, technical quality and outcomes.

The five global questions were used to determine the dependent variable--overall patient satisfaction. They included: "Overall, how would you evaluate the health care at Kimbrough?", "I am very satisfied with the health care I receive at Kimbrough", "There are some things about the health care I receive at Kimbrough that could be better", "The health care I have been receiving at Kimbrough is just about perfect", and "I am dissatisfied with some things about the health care I receive at Kimbrough". The first question was rated on a 5-point scale ranging from "1" as poor to "5" as excellent. The other four questions were rated on a 5-point scale of agreement with "1" being the strongest agreement and "5" being the strongest disagreement.

The questions on the eight major dimensions of satisfaction were used to determine the independent variables. Each question was rated on a 5-point scale with "1" being poor and "5" being excellent. An additional point, "NA", was added for patients who had not used the service in question.

Demographic data was collected on gender, age, personal health status, racial background, pay grade, branch of military service, beneficiary category, and marital status. Utilization data was collected on length of time and amount Kimbrough had been used, reasons for not using Kimbrough, number of outpatient visits, number of admissions, wait time for appointments, wait

time to see provider, driving time to Kimbrough, most frequent type of visit, frequency of seeing the same provider, number of visits for specific clinics, and frequency of access methods.

Questions on the possible use of new services at Kimbrough were also included in the survey to aid in decision-making about new services at Kimbrough. Amount of use of a customer service window, evening hours, advise nurse service, and weekend clinics were rated on a 5-point scale with "1" being always and "5" being rarely or never.

Three open-ended questions were included to allow respondents to openly express their opinions: "What two things do you like most about Kimbrough", "What two things might we improve at Kimbrough", and "Any additional comments you would like to make". These questions were annotated as optional.

The coverletter for the survey was signed by the hospital commander as an "invitation to shape your hospital". It included the mission of Kimbrough and the new marketing logo and slogan. The survey was announced in the local Fort George G. Meade community newspaper, the Kimbrough Customer Newsletter, and during several meetings both in the hospital and in the community.

The survey was distributed through the mail. Each survey packet included a prepaid, business reply envelope and

instructions on mailing the survey back. The survey instrument is at the Appendix.

The Sample

The target population for this survey was the users of Kimbrough's outpatient services during the month of December 1994. For the month of December, a total of 17,451 patients visited the clinics. Central Appointment's clinic schedule records were used to obtain the sample of patients to send a survey. Only patients who kept their appointments and actually saw a health care provider were considered. Patients' social security numbers were used to randomly select 1000 recipients of the survey. The survey was sent in care of the parental guardian for patients that had a family member prefix showing they were children. Multiple visits were ignored so each family would only receive one survey.

Due to the constraints of the clinic schedule database, an accurate distribution of the sample by beneficiary category or gender could not be extracted. Most of the addresses were expected to be correct since the appointment clerks update addresses when patients obtain an appointment.

Statistical Methods

Patient confidentiality was ensured by coding each survey with a number from 1 to 1000, which was used for tracking and data entry. Mutually exclusive, categorical exhaustive variables included gender and responses to "Reasons for not using Kimbrough a majority of the time". Gender was coded as "1" for female and "0" for male. Reason for not using Kimbrough was coded as "1" for circled and "0" for not circled. All other variables were coded as continuous variables. Survey questions which did not reflect "5" as the highest rating were recoded (questions 40, 41, 42, 43, 49, 52, 53, 54, and 55). The additional rating point on questions 4 through 39 to indicate "have not used" was coded as a missing value and not included in statistical analysis. Any questions left blank were also coded as missing values and not included in statistical analysis.

Descriptive statistics were computed on all demographic and utilization questions and reported in tables as numbered totals and frequency percentages. Means and standard deviations were computed for the items making up the dependent and independent variables. Frequencies of ratings for each question were also computed.

Reliability of the independent variables was tested by computing alpha coefficients and probability levels within each section of items. Results above .7 were considered consistent.

The dependent and independent variables were collapsed into the mean of each category. The five global satisfaction questions became one mean variable representing overall satisfaction. Likewise, each of the eight major dimensions of patient satisfaction became single variables represented by the mean of all items in that category.

Pearson product-moment correlation coefficients were computed to determine the relationship between each major dimension and overall satisfaction. Correlation coefficients were also computed between overall satisfaction and beneficiary category. Statistical significance of each relationship was determined using an analysis of variance (ANOVA) model. Relationships were considered statistically significant if the probability level was above .05, meaning only five times out of one hundred would that relationship be due to chance alone.

Finally, open-ended questions were summarized into categories and reported in tables as numbered totals and frequency percentages.

CHAPTER 3

THE RESULTS

Return Rate

A total of 385 surveys were completed and returned. An additional 38 surveys were returned as undeliverable. The overall response rate was 40 percent. Figure 1 shows the composition of the respondents by beneficiary category and gender. Family members of active duty represented the largest percentage of respondents. Out of the 385 returned surveys, 130 surveys were filled out by a family member of an active duty soldier, representing 34 percent of the respondents. Active duty respondents represented 24 percent of the total, followed by family members of retired personnel with 21 percent. Retiree respondents represented 16 percent of the total number of respondents. Family members of the deceased respondents only represented 5 percent of the total.

Figure 2 shows that females made up a majority of the respondents with a percentage of 65. Males composed 35 percent of the respondents.

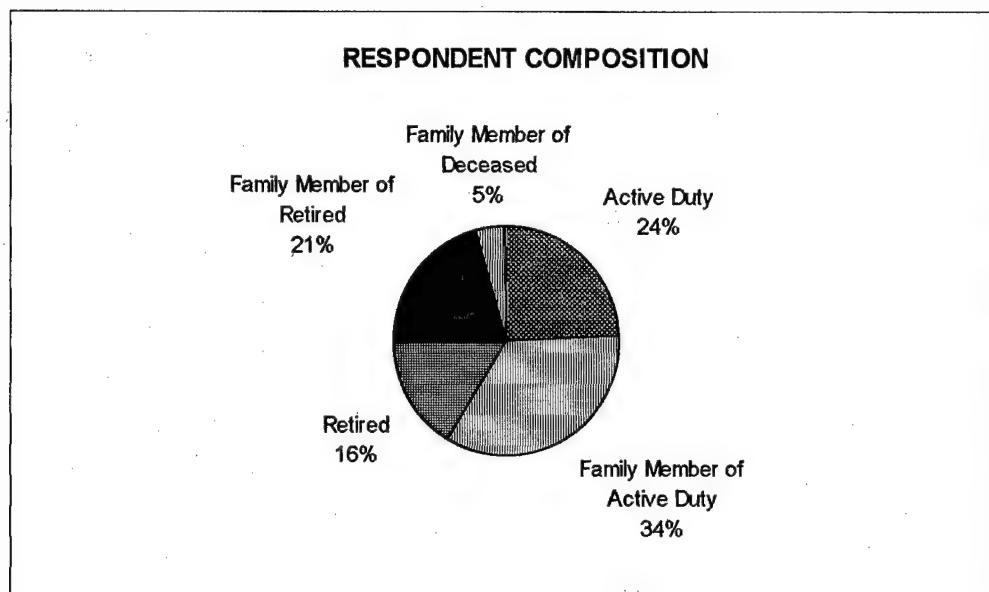


FIGURE 1. RESPONDENT COMPOSITION BY BENEFICIARY CATEGORY

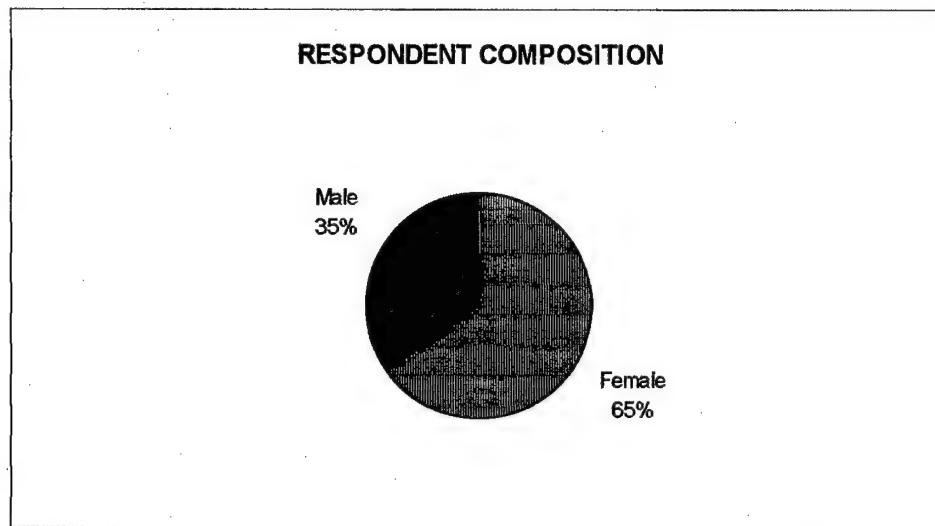


FIGURE 2. RESPONDENT COMPOSITION BY GENDER

Demographics

Table 1 summarizes the demographic characteristics of the 385 returned surveys. A total of 250 respondents were female (65 percent) and 135 were male (35 percent). Approximately one-fourth of the respondents were 60 years or older and another one-fourth were between the ages of 30 and 39 years. Almost 50 percent of the respondents were below the age of 40. More than half of the respondents reported their own health status as "very good" or "excellent" (37 percent and 17 percent, respectively). Only 3 percent reported "poor" health status.

Eighty percent of the respondents reported white racial background, and approximately 15 percent reported black or African American racial background. Only five percent of the respondents indicated Hispanic origin.

Seventy-seven percent of the respondents were married. The most frequently reported military pay grade was E7 through E9 at 35 percent. The E5 through E6 category followed with 27 percent. Nearly 61 percent of the respondents were part of the Army and 22 percent were Air Force. Family member of active duty was the most frequently reported beneficiary category with 34 percent of the respondents. The typical respondent based on highest frequencies was a 30-39 year old, white, non-Hispanic, female, family member married to an Army soldier in a grade between E7 and E9.

TABLE 1. SAMPLE DEMOGRAPHIC CHARACTERISTICS

Demographic Characteristic		Number	Percentage
Gender:	Male	135	35.1
	Female	250	64.9
Age:	<21 years	32	8.4
	21-29 years	64	16.8
	30-39 years	91	23.9
	40-49 years	63	16.5
	50-59 years	45	11.8
	>59 years	86	22.6
Personal Health Status	Excellent	67	17.5
	Very Good	141	36.8
	Good	127	33.2
	Fair	36	9.4
	Poor	12	3.1
Racial Background:	White	303	79.7
	Black/African American	55	14.5
	Indian/Native American	4	1.1
	Asian or Pacific Islander	7	1.8
	Other	11	2.9
Hispanic Origin:	Yes	17	4.6
	No	353	95.4
Marital Status:	Never Married	44	11.5
	Married	296	77.1
	Separated	11	2.9
	Divorced	12	3.1
	Widowed	21	5.5
Military Pay Grade:	E1-E4	33	8.8
	E5-E6	101	26.9
	E7-E9	132	35.1
	WO1-CW4	23	6.1
	O1-O3	26	6.9
	O4-O5	43	11.4
	O6-O9	18	4.8
Branch of Service:	Army	230	60.8
	Navy	49	13.0
	Air Force	82	21.7
	Marine	14	3.7
	Coast Guard	3	.8

TABLE 1 (CONTINUED). SAMPLE DEMOGRAPHIC CHARACTERISTICS

Demographic Characteristic		Number	Percentage
Beneficiary Category:			
	Active Duty (AD)	93	24.3
	Family Member of AD	130	34.0
	Retired (Ret)	62	16.2
	Family Member of Retired	80	20.9
	Family Member of Deceased	17	4.5

Utilization

Table 2 summarizes the utilization characteristics of the respondents. Over one-half of the respondents had used Kimbrough for three or more years. The average amount of health care received from Kimbrough rather than other military treatment facilities, CHAMPUS, or private insurance was approximately 71 percent. The primary reasons for not receiving a majority of health care at Kimbrough were: Too difficult to get an appointment (16 percent), lack of services (15 percent), some other reason (14 percent), wait time to be seen (14 percent), and not getting to see same provider (11 percent).

Approximately 72 percent of the respondents reported having between two and nine outpatient visits in the past 12 months.

TABLE 2. SAMPLE UTILIZATION CHARACTERISTICS

Utilization Characteristic		Number	Percentage
Length of Time Used:	<1 year	74	19.2
	1-2 years	94	24.4
	>2 years	217	56.4
Percent of Care From:	KACH	—	71.3
	Other MTFs	—	18.0
	CHAMPUS	—	5.9
	Private Insurance	—	4.5
Reason Majority of Care Not From KACH:	Lacks services	59	15.3
	Not conveniently located	14	3.6
	Not treated courteously	32	8.3
	Providers not thorough	29	7.5
	See different providers	43	11.2
	Schedule conflicts	24	6.2
	Live too far away	32	8.3
	Too difficult to get appointment	62	16.1
	Wait time to be seen	53	13.8
	Referred to civilian facility	3	.8
	Simply prefer another source	24	6.2
	Other reasons	54	14.0
	NA - Majority at KACH	216	56.1
Number of Outpatient Visits:	None	22	5.8
	One	20	5.2
	Two to four	151	39.6
	Five to nine	124	32.5
	Ten or more	64	16.8
Number of Admissions:	None	333	88.1
	One	25	6.6
	Two to four	18	4.8
	Five to nine	1	.3
	Ten or more	1	.3
Appointment Wait Time:	2 days or less	55	14.6
	3 days to 1 week	51	13.6
	1 - 2 weeks	79	21.0
	3 - 4 weeks	115	30.6
	5 - 6 weeks	38	10.1
	7 or more weeks	15	4.0
	Have not used	23	6.1

TABLE 2 (CONTINUED). SAMPLE UTILIZATION CHARACTERISTICS

Utilization Characteristic		Number	Percentage
Wait Time to be Seen:			
< 10 minutes	45	11.7	
10 - 15 minutes	91	23.8	
16 - 30 minutes	139	36.3	
31 - 45 minutes	58	15.1	
46 - 60 minutes	23	6.0	
> 60 minutes	10	2.6	
Have not used	17	4.4	
Travel Time to KACH:			
<10 minutes	100	26.1	
10-15 minutes	95	24.8	
16-30 minutes	126	32.9	
31-45 minutes	33	8.6	
46-60 minutes	15	3.9	
>60 minutes	14	3.7	
Characterization of Majority of Visits:			
Minor illness or injury	226	59.2	
Chronic condition	138	36.1	
Emergency	18	4.7	
Same Provider:			
Always	65	17.1	
Most of the time	104	27.4	
About half the time	34	8.9	
Sometimes	64	16.8	
Rarely or never	113	29.7	
Average Number of Visits:			
General Outpatient Clinic	2.2	—	
Internal Medicine Clinic	1.5	—	
Pediatric Clinic	2.2	—	
Gynecology Clinic	.8	—	
Orthopedic Clinic	.6	—	
Mental Health Clinic	.2	—	
Ear, Nose and Throat Clinic	.3	—	
Optometry Clinic	.4	—	
Physical Therapy Clinic	.9	—	
Other Clinics	1.0	—	
Average Percent of Access:			
Walk in	—	21.0	
Same day	—	19.1	
Routine	—	59.8	

Most of them did not have any admissions during that period (88 percent). Almost 50 percent reported waiting over three weeks between making an appointment and the actual day of the visit. Sixty percent of the respondents reported waiting 15 minutes or more at the clinic for their appointed visit.

Over 80 percent of the respondents travel 30 minutes or less to visit Kimbrough. Fifty-nine percent of the respondents characterized a majority of their visits to Kimbrough as minor illness or injury. Thirty-six percent characterized their visits as treatment for chronic conditions. Less than five percent reported emergency care as the majority of their visits to Kimbrough. Almost 30 percent reported rarely or never seeing the same provider for those visits. However, almost 45 percent reported seeing the same provider most of the time or always.

The general outpatient and pediatric clinics both had the highest average number of visits for the past 12 months as reported by the survey respondents (2.2 visits). The average percentage of access by routine appointment was nearly 60 percent. Walk-in access comprised 21 percent, while same day appointments comprised 19 percent.

Utilization of proposed new services at Kimbrough was also summarized. Table 3 shows that most respondents estimated only using a customer service window sometimes (36 percent). The mean score was 2.51, between "sometimes" and "about half the time".

The mean scores for evening hours, Ask-A-Nurse service, and weekend clinics were all close to 3, "about half the time", (3.05, 3.04 and 3.04 respectively). Twenty-four percent of the respondents estimated using evening hours for routine clinics most of the time. Approximately one-fourth of the respondents estimated using the Ask-A-Nurse service sometimes and another one-fourth estimated using the service most of the time. Twenty-six percent of the respondents estimated using weekend clinics sometimes. Twenty-one percent estimated using weekend clinics most of the time, and twenty-two percent estimated using them always.

TABLE 3. UTILIZATION OF NEW SERVICES

New Service	Mean	Std Dev	%1	%2	%3	%4	%5 ^a
Customer Service Window	2.51	1.34	25.3	37.1	11.6	13.4	12.6
Evening Hours	3.05	1.44	21.0	17.6	16.8	24.7	19.9
Ask-A-Nurse Service	3.04	1.41	17.5	25.7	12.2	25.1	19.6
Weekend Clinics	3.04	1.44	17.8	26.0	13.0	20.7	22.5

^aThe rating scale for these questions was recoded during data analysis to reflect: 1 = Rarely or Never; 2 = Sometimes; 3 = About half the time; 4 = Most of the time; 5 = Always.

Descriptive Statistics

The survey instrument contained 36 rated items that fell into the categories of access, physical environment of facility, finances, interpersonal care, communications, choice and continuity, technical quality, and outcomes. The survey also contained five rated items for overall satisfaction with health

care at Kimbrough. Table 4 summarizes the responses to the 41 items with mean scores and standard deviations, and gives mean total scores and standard deviations that were used for further analyses.

Overall, the item ratings were favorable with most means falling around the middle rating of "3", or "good", and a standard deviation of ± 1 rating scale point. The lowest mean score was 2.65 (between the rating of "2", or "fair", and "3", or "good") for the item "length of time you wait between making an appointment for routine care and the day of your visit". Following closely with a mean score of 2.68 (also between "fair" and "good") was the item "length of time you wait at the office to see the health care provider". The highest mean score was 4.17 (between the rating of "4", or "very good", and "5", or "excellent") for the item "convenience of location of Kimbrough". Both the lowest and highest scores fell under the access category.

The highest standard deviation (± 1.41 rating scale points) occurred with the item "ease of seeing the health care provider of your choice", followed by the next highest (± 1.40 rating scale points) which occurred with the item "staff's sensitivity to financial impact". The lowest standard deviation was $\pm .86$ rating scale points for the item "location of services and clinics you most frequently visit".

TABLE 4. DESCRIPTIVE DATA FOR DEPENDENT AND INDEPENDENT VARIABLES

Variable		N	Mean ^a	Std Dev
OVERALL SATISFACTION:				
Overall Evaluation of KACH	TOTAL	385	3.39	.47
		381	3.24	1.09
Overall Satisfaction with Care		384	3.53	1.22
Some Things Could Be Better		382	3.93	1.05
Health Care is Just About Perfect		385	2.84	1.28
Dissatisfied with Some Things		381	3.39	1.29
ACCESS:	TOTAL	385	3.20	.86
Convenience of Location		384	4.17	1.04
Convenience of Hours		382	3.58	1.07
Access to Health Care		378	3.13	1.25
Access to Specialty Care		328	2.81	1.35
Access to Inpatient Care		224	3.53	1.18
Access to Emergency Care		296	3.49	1.31
Help with Arrangements for Care		317	3.25	1.23
Making Appointments by Phone		377	2.80	1.23
Wait Time at Office		385	2.68	1.15
Wait Time Between Appointment and Visit		370	2.65	1.20
Health Care Information by Phone		262	2.79	1.23
Prescription Services		362	3.46	1.19
PHYSICAL ENVIRONMENT OF FACILITY:	TOTAL	385	3.67	.80
Overall Cleanliness		385	3.74	.96
Location of Services and Clinics		378	3.89	.86
Waiting and Treatment Areas		384	3.40	1.05
Ease of Finding Clinics or Services		383	3.74	.91
FINANCES:	TOTAL	196	3.53	1.33
Protection Against Financial Hardship		192	3.62	1.34
Staff's Sensitivity to Financial Impact		107	2.95	1.40
INTERPERSONAL CARE:	TOTAL	384	3.54	1.04
Courtesy Shown by Providers		381	3.74	1.12
Courtesy Shown by Receptionists		382	3.51	1.21
Personal Interest Shown		373	3.50	1.26
Concern For You as a Person		382	3.50	1.24
Concern for Privacy		367	3.73	1.10
Reassurance and Support		371	3.50	1.17
Amount of Time During Visit		382	3.36	1.22
COMMUNICATIONS:	TOTAL	382	3.46	1.10
Explanation of Procedures		376	3.56	1.13
Explanation of Tests		360	3.48	1.20
Advice to Stay Healthy		350	3.42	1.23
Attention to What You Say		373	3.41	1.20

TABLE 4 (CONTINUED). DESCRIPTIVE DATA FOR DEPENDENT AND INDEPENDENT VARIABLES

Variable		N	Mean ^a	Std Dev
CHOICE AND CONTINUITY				
Ability to Choose Provider	TOTAL	302	2.74	1.39
		293	2.72	1.38
Ease of Seeing Your Choice		286	2.73	1.41
TECHNICAL QUALITY:				
Thoroughness of Exam	TOTAL	381	3.50	1.14
		379	3.46	1.20
Skill of Provider		379	3.57	1.13
Thoroughness of Treatment		377	3.46	1.22
OUTCOMES:				
How Much You are Helped	TOTAL	383	3.47	1.15
		380	3.49	1.18
Overall Quality of Health Care		382	3.45	1.18

^aAll variables are coded on a 5-point scale with "5" being the highest rating.

The lowest mean total score occurred with the independent variable "choice and continuity" (2.74). The average response fell between the rating of "2", or fair, and "3", or good. The highest mean total score occurred with the independent variable "physical environment of facility" (3.67), which also had a fairly low standard deviation ($\pm .80$ rating scale points) showing a tight distribution of item means around the total mean. The mean total score with the lowest standard deviation was the dependent variable "overall satisfaction" ($\pm .47$ rating scale points).

The frequencies of responses to each dependent and independent variable item are shown in Table 5. Thirty-five percent of the respondents described their overall evaluation of

health care at Kimbrough as "very good". Only 26 percent described their overall evaluation as "fair" or "poor". Forty-one percent of the respondents agreed with the statement "I am very satisfied with the health care I receive at Kimbrough". Forty-four percent agreed with the statement "there are some things about the health care I receive at Kimbrough that could be better". Only 28 percent of the respondents agreed with the statement "the health care I have been receiving at Kimbrough is just about perfect", while about the same number (29 percent) disagreed. Thirty-six percent of the respondents agreed with the statement "I am dissatisfied with some things about the health care I receive at Kimbrough", and 22 percent strongly agreed. Only 32 percent disagreed or strongly disagreed with that statement.

Only three items had the highest frequency of responses under the rating of "5", or "excellent". They included "convenience of location of Kimbrough" with a frequency of 51 percent, "access to medical care in an emergency" with a frequency of 30 percent, and "protection you have against hardship due to medical expenses" with a frequency of 32 percent. Three items had the highest frequency of responses under the rating of "1", or "poor". They included "access to a specialist if you need one" with a frequency of 23 percent, "ability to

TABLE 5. DEPENDENT AND INDEPENDENT VARIABLES RESPONSE CATEGORY PERCENTAGES

Question Number and Survey Item ^a	%1	%2	%3	%4	%5 ^b
OVERALL SATISFACTION:					
2. Overall Evaluation of KACH	6	20	28	35	11
40. Overall Satisfaction with Care ^c	9	13	15	41	22
41. Some Things Could Be Better ^c	4	8	12	44	32
42. Health Care is Just About Perfect ^c	17	29	16	28	10
43. Dissatisfied With Some Things ^c	8	24	10	36	22
ACCESS:					
4. Convenience of Location	2	5	18	24	51
5. Convenience of Hours	3	12	32	30	23
6. Access to Health Care	12	20	29	22	17
7. Access to Specialty Care	23	21	22	21	13
8. Access to Inpatient Care	6	14	22	35	23
9. Access to Emergency Care	9	15	22	24	30
10. Help With Arrangements for Care	10	20	26	25	19
11. Making Appointments by Phone	19	22	28	22	9
12. Wait Time at Office	19	26	30	19	6
13. Wait Time Between Appointment and Visit	21	25	29	18	7
14. Health Care Information by Phone	21	19	29	24	7
15. Prescription Services	7	14	29	27	23
PHYSICAL ENVIRONMENT OF FACILITY:					
16. Overall Cleanliness	1	10	27	39	23
17. Location of Services and Clinics	1	3	30	40	26
18. Waiting and Treatment Areas	3	18	32	30	17
19. Ease of Finding Clinics or Services	1	7	32	38	22
FINANCES:					
20. Protection Against Financial Hardship	12	8	17	31	32
21. Staff's Sensitivity to Financial Impact	24	12	22	28	14
INTERPERSONAL CARE:					
22. Courtesy Shown by Providers	5	8	25	32	30
23. Courtesy Shown by Receptionists	8	12	24	32	24
24. Personal Interest Shown	9	14	20	32	25
25. Concern For You as a Person	9	14	22	30	25
26. Concern for Privacy	5	7	23	38	27
27. Reassurance and Support	7	14	24	33	22
28. Amount of Time During Visit	9	16	27	28	20
COMMUNICATIONS:					
29. Explanation of Procedures	5	13	26	32	24
30. Explanation of Tests	7	13	27	29	24
31. Advice to Stay Healthy	9	13	27	28	23
32. Attention to What You Say	8	15	27	28	22

TABLE 5 (CONT.). DEPENDENT AND INDEPENDENT VARIABLES RESPONSE CATEGORY PERCENTAGES

Question Number and Survey Item ^a	%1	%2	%3	%4	%5 ^b
CHOICE AND CONTINUITY:					
33. Ability to Choose Provider	28	17	24	18	13
34. Ease of Seeing Your Choice	27	18	23	17	15
TECHNICAL QUALITY:					
35. Thoroughness of Exam	7	15	28	26	24
36. Skill of Provider	6	10	31	29	24
37. Thoroughness of Treatment	9	12	28	27	24
OUTCOMES:					
38. How Much You Are Helped	8	10	30	29	23
39. Overall Quality of Health Care	7	13	29	29	22

^aSurvey items in this table are an abbreviated form of the questions contained in the Patient Satisfaction Survey.

^bRating scale for questions 2 and 4-39: 1 = Poor; 2 = Fair; 3 = Good; 4 = Very Good; 5 = Excellent. Rating scale for questions 40-43: 1 = Strongly Disagree; 2 = Disagree; 3 = Not Sure; 4 = Agree; 5 = Strongly Agree.

^cSurvey questions 40-43 were recoded during data analysis so that "5" represented the highest rating.

choose health care providers" with a frequency of 28 percent, and the other item in the choice and continuity category, "ease of seeing the health care provider of your choice" with a frequency of 27 percent. Another item, "staff's sensitivity to the financial impact of the care we assisted you in finding from another source" had a high frequency (24 percent) under the rating of "1", or "poor", even though the highest frequency of responses fell under the rating of "4", or "very good", with a frequency of 28 percent.

Many of the items under the access category had the highest frequency of responses under the rating of "3", or "good". All the items under the technical quality category had the highest

frequency of responses under the rating of "good". All the items under the interpersonal care and communications categories had the highest frequency of responses under the rating of "4", or "very good". Most of the items under physical environment of facility had the highest frequency of responses under the rating of "4", or "very good". The items under outcomes were split between high frequency of responses under the rating of "3", or "good" and "4", or "very good".

Table 6 shows the categories of responses to the open-ended questions along with the number and frequency of each response. The first two questions were summarized into categories; however, the last question, "Any additional comments you would like to make", was transcribed into a document and circulated through the commanders for review. The most frequently occurring response to the first question, "What two things do you like the most about Kimbrough?" was convenience of location (33 percent). Friendliness and courtesy of staff comprised 12 percent of the responses, while availability of services and pediatric services each comprised almost 11 percent.

The most frequently occurring response to the second question, "What two things might we improve at Kimbrough?", was pharmacy services and wait time with a frequency of 15 percent. Making appointments by phone, wait time for appointments and friendliness and courtesy of staff were also part of the top four

TABLE 6. FREQUENCY OF CATEGORICAL RESPONSES TO OPEN-ENDED QUESTIONS

Things Liked Most About Kimbrough	Frequency of Response	Percent of Total
1. Convenience of Location	141	32.5%
2. Friendliness and Courtesy of Staff	51	11.7%
3. Availability of Services	47	10.8%
4. Pediatric Services	46	10.6%
5. Caring/Concern for Patient	39	9.0%
6. Phone-in Refills/Pharmacy Services	29	6.7%
7. Named a Health Care Provider	29	6.7%
8. Quality of Medical Care	29	6.7%
9. No Cost for Care	10	2.3%
10. Cleanliness of Facility	8	1.8%
11. Treatment and Services for Retirees	5	1.2%

Things That Might Be Improved	Frequency of Response	Percent of Total
1. Pharmacy Services/Wait Time	65	14.9%
2. Making Appointments by Phone	41	9.4%
3. Wait Time for Appointments	38	8.7%
4. Friendliness and Courtesy of Staff	37	8.5%
5. Number of Specialty Services	30	6.9%
6. Hours	26	5.9%
7. Emergency Room/Wait Time	24	5.5%
8. Customer Service	22	5.0%
9. Physical Facility/Environment of Care	21	4.8%
10. General Outpatient Clinic/Wait Time	20	4.6%
11. Increased Staffing	17	3.9%
12. Continuity of Care	14	3.2%
13. Quality of Medical Care	13	3.0%
14. Overall Telephone System/Long Distance Calls	11	2.5%
15. More Advice/Information About Care	11	2.5%
16. Treatment and Services for Retirees	10	2.3%
17. Lab/Wait Time	9	2.1%
18. OB/GYN Services	7	1.6%
19. Parking	6	1.4%
20. Xray/Wait Time	5	1.1%
21. Priority to Active Duty	5	1.1%
22. Outpatient Records	5	1.1%

responses, each with frequencies close to 9 percent. The second question definitely had a wider variety of responses that summarized into 22 categories. The first question only summarized into 11 categories.

Reliability

Inter-item correlations were computed on the items of each major dimension of satisfaction that made up the independent variables. Table 7 shows the correlation coefficients with in each dimension. All but three correlations were significant at the $p < .001$ level. One correlation was significant at the $p < .01$ level; the other two were significant at the $p < .05$ level.

Moderate to high inter-item correlations were found with the highest correlation between "ease of seeing the health care provider of your choice" and "ability to choose health care providers" ($r = .96$). Other high correlations were between "provider's explanation of health care procedures" and "explanation of health care tests" ($r = .92$), and "provider's concern for you as a person" and "health care providers' personal interest in the outcome of your problem" ($r = .90$). The lowest correlations were between "convenience of location of Kimbrough" and "length of time you wait at the office to see the health care provider" ($r = .12$), "convenience" and "availability of health care information or advice by phone" ($r = .14$), "convenience"

TABLE 7. INTER-ITEM CORRELATIONS FOR INDEPENDENT VARIABLES

Variables	Corresponding Question Numbers											
	4 ^a	5	6	7	8	9	10	11	12	13	14	15
ACCESS:												
4. Convenience of Location	1.00											
5. Convenience of Hours	.44	1.00										
6. Access to Health Care	.23	.66	1.00									
7. Access to Specialty Care	.20	.53	.74	1.00								
8. Access to Inpatient Care	.39	.62	.72	.78	1.00							
9. Access to Emergency Care	.31	.51	.61	.58	.72	1.00						
10. Help with Arrangements for Care	.22	.59	.70	.75	.73	.65	1.00					
11. Making Appointments by Phone	.16	.41	.46	.42	.39	.34	.56	1.00				
12. Wait Time at Office	.12	.43	.53	.48	.46	.44	.57	.53	1.00			
13. Wait Time Between Appt and Visit	.18	.44	.56	.48	.51	.41	.60	.58	.60	1.00		
14. Health Care Information by Phone	.14	.47	.60	.58	.58	.50	.70	.50	.51	.53	1.00	
15. Prescription Services	.28	.43	.44	.36	.42	.47	.38	.38	.40	.40	.39	1.00
PHYSICAL ENVIRONMENT OF FACILITY:	16	17	18	19								
16. Overall Cleanliness	1.00											
17. Location of Services and Clinics	.61	1.00										
18. Waiting and Treatment Areas	.59	.55	1.00									
19. Ease of Finding Clinics or Services	.54	.72	.63	1.00								
FINANCES:	20	21										
20. Protection Against Financial Hardship	1.00											
21. Staff's Sensitivity to Financial Impact	.77	1.00										
INTERPERSONAL CARE:	22	23	24	25	26	27	28					
22. Courtesy Shown by Providers	1.00											
23. Courtesy Shown by Receptionists	.70	1.00										
24. Personal Interest Shown	.77	.58	1.00									
25. Concern For You as a Person	.79	.61	.90	1.00								
26. Concern for Privacy	.67	.56	.72	.77	1.00							
27. Reassurance and Support	.79	.63	.86	.89	.78	1.00						
28. Amount of Time During Visit	.72	.57	.76	.77	.69	.80	1.00					

TABLE 7 (CONTINUED). INTER-ITEM CORRELATIONS FOR INDEPENDENT VARIABLES

Variables	Corresponding Question Numbers			
	29	30	31	32
COMMUNICATIONS:				
29. Explanation of Procedures	1.00			
30. Explanation of Tests	.92	1.00		
31. Advice to Stay Healthy	.79	.80	1.00	
32. Attention to What You Say	.77	.78	.84	1.00
CHOICE AND CONTINUITY:	33	34		
33. Ability to Choose Provider	1.00			
34. Ease of Seeing Your Choice	.96	1.00		
TECHNICAL QUALITY:	35	36	37	
35. Thoroughness of Exam	1.00			
36. Skill of Provider	.85	1.00		
37. Thoroughness of Treatment	.89	.89	1.00	
OUTCOMES:	38	39		
38. How Much You are Helped	1.00			
39. Overall Quality of Health Care	.89	1.00		

^aAll correlations are significant at the $p < .001$ level, two-tailed test, except the correlations between question 4 and question 11 ($p < .01$) and question 4 and questions 12 and 14 ($p < .05$).

and "ease of making appointments by phone" ($r = .16$), and "convenience" and "length of time you wait between making an appointment for routine care and the day of your visit" ($r = .18$).

Inter-item correlations were considered consistent if $r > .70$. In the access category only 6 out of the 66 correlations were over the level. Physical environment of facility had 1 out

of 6; finances had 1 out of 1; interpersonal care had 14 out of 21; communications had 6 out of 6; choice and continuity had 1 out of 1; technical quality had 3 out of 3; and outcomes had 1 out of 1 correlations over the $r = .7$ level.

Correlations

Correlation coefficients were determined between the mean total score for overall satisfaction with health care at Kimbrough and the mean total scores for the eight major dimensions of patient satisfaction and beneficiary category to answer the research questions of this study. Table 8 shows the number of scores in each computation (n), the correlation coefficients (r), and the probability associated with the correlations determined from a 2-tailed test of significance (p). All the correlations between overall satisfaction and the eight major dimensions of patient satisfaction were within the normal range for social sciences (.30 to .70) (Freedman, Pisani and Purves 1978, 118). All the correlations between overall satisfaction and the five beneficiary categories were below .30.

Each of the dimension categories showed a positive correlation with overall satisfaction and all probability levels were $p < .001$. In the beneficiary category, however, two categories showed negative correlations: overall satisfaction correlated with active duty ($r = -.182$); and overall satisfaction

correlated with family member of active duty ($r = -.161$). Three of the correlations showed probability levels at $p < .001$. Two correlations (overall satisfaction and family member of active duty, and overall satisfaction and family member of deceased) were at $p < .05$.

TABLE 8. CORRELATIONS WITH OVERALL SATISFACTION

Independent Variables	N	r	p
Dimensions of Satisfaction			
Access	385	.494	.000
Physical Environment	385	.422	.000
Finances	196	.317	.000
Interpersonal Care	384	.512	.000
Communications	382	.459	.000
Choice and Continuity	302	.407	.000
Technical Quality	381	.495	.000
Outcomes	383	.536	.000
Beneficiary Category			
Active Duty	382	-.182	.000
Family Member of Active Duty	382	-.161	.002
Retired Service Member	382	.172	.001
Family Member of Retiree	382	.168	.001
Family Member of Deceased	382	.108	.036

Statistical Significance

Correlations were tested for statistical significance using simple factorial analysis of variance (ANOVA). Table 9 shows the results of the tests for statistical significance. All the relationships tested were significant using $p < .05$ as the

TABLE 9. ANALYSIS OF VARIANCE

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio	Probability Level
Access					
Explained	21.011	4	5.253	30.636	.000
Residual	65.153	380	.171		
Total	86.164	384	.224		
Physical Environment					
Explained	15.415	4	3.854	20.699	.000
Residual	70.749	380	.186		
Total	86.164	384	.224		
Finances					
Explained	6.124	4	1.531	6.949	.000
Residual	42.083	191	.220		
Total	48.207	195	.247		
Interpersonal Care					
Explained	23.007	4	5.752	34.588	.000
Residual	63.025	379	.166		
Total	86.032	383	.225		
Communications					
Explained	18.075	4	4.519	25.429	.000
Residual	66.992	377	.178		
Total	85.067	381	.223		
Choice and Continuity					
Explained	15.846	4	3.962	20.415	.000
Residual	57.633	297	.194		
Total	73.479	301	.244		
Technical Quality					
Explained	23.352	4	5.838	35.337	.000
Residual	62.119	376	.165		
Total	85.471	380	.225		
Outcomes					
Explained	26.171	4	6.543	41.578	.000
Residual	59.483	378	.157		
Total	85.654	382	.224		
Active Duty					
Explained	2.783	1	2.783	12.989	.000
Residual	81.410	380	.214		
Total	84.192	381	.221		

TABLE 9 (CONTINUED). ANALYSIS OF VARIANCE

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F Ratio	Probability Level
Family Member of Active Duty					
Explained	2.176	1	2.176	10.083	.002
Residual	82.016	380	.216		
Total	84.192	381	.221		
Retired Service Member					
Explained	2.497	1	2.497	11.615	.001
Residual	81.695	380	.215		
Total	84.192	381	.221		
Family Member of Retiree					
Explained	2.388	1	2.388	11.095	.001
Residual	81.804	380	.215		
Total	84.192	381	.221		
Family Member of Deceased					
Explained	.973	1	.973	4.442	.036
Residual	83.220	380	.219		
Total	84.192	381	.221		

confidence interval. In fact, all but two relationships were significant at the $p < .001$ level: overall satisfaction and family member of active duty, and overall satisfaction and family member of deceased.

CHAPTER 4
DISCUSSION

The Findings

The results of this study indicate that overall, the respondents were moderately satisfied. This finding is consistent with the study conducted by Dr. A. David Mangelsdorff that examined satisfaction of eligible beneficiaries who used military treatment facilities between 1989 and 1992 (Mangelsdorff 1994). In this study, respondents evaluated the health care they received at Kimbrough as good which corresponds to the mid-point of the 5-point rating scale.

Respondents had the most positive attitudes toward the physical environment of Kimbrough, especially the location of services and clinics. Mangelsdorff's study did not examine physical environment of facility and found respondents had the highest positive attitude toward interpersonal care. In this study, attitudes toward interpersonal care were the second most positive, with the most positive attitudes being toward courtesy shown by health care providers. Twenty-nine of the respondents went so far as to actually name a provider when asked "What two things do you like most about Kimbrough?"

These results and Mangelsdorff's results show respondents having the least positive attitude toward choice and continuity.

Attitudes toward access were also low, even though the single item with the most positive ratings in this study was convenience of location. Convenience of location was also the most frequent response to the question "What two things do you like most about Kimbrough?". Within the access dimension, respondents gave the lowest ratings to access to specialty care, making appointments by phone, wait time at the office, wait time between appointment and visit, and availability of health care information by phone.

Over one-half of the categories in response to the question "What two things might we improve at Kimbrough?" dealt with improving certain aspects of access.

This study showed that outcomes was the dimension most related to patient satisfaction ($r = .536$, $F(4,378) = 41.578$, $p < .001$), followed by interpersonal care ($r = .512$, $F(4,379) = 34.588$, $p < .001$). Technical quality ($r = .495$, $F(4,376) = 35.337$, $p < .001$), and access followed in order of decreasing correlation coefficients ($r = .494$, $F(4,380) = 30.636$, $p < .001$).

Out of the eight major dimensions, physical environment was the dimension least related to patient satisfaction ($r = .422$, $F(4,380) = 20.699$, $p < .001$).

This study also showed that the individual beneficiary categories were not highly correlated with satisfaction. However, being an active duty soldier or family member of active duty were indicators of less satisfaction ($r = -.182$, $F(1,380) =$

12.989, $p < .001$ for the active duty category; $r = -.161$, $F(1,380) = 10.083$, $p < .05$ for the family member of active duty category).

To improve patient satisfaction with health care at Kimbrough, it may be valuable to first consider outcomes, interpersonal relations, technical quality, and access since they are most related to overall satisfaction. However, further statistical analysis with these data could show other significant relationships with satisfaction. A step-wise regression analysis would offer more information and show how much each dimension contributed to overall satisfaction, controlling for the other factors.

The Survey

As the reliability results indicate, some parts of the survey instrument should be altered to more accurately measure the individual dimensions of patient satisfaction (mainly in the access, physical environment of facility, and interpersonal care categories). Additionally, questions that asked for a percentage of use (questions 3 and 51) totaling 100 percent seemed to be ambiguous to some respondents. For example, an answer of 1 percent usage of routine appointments and 99 percent usage of walk-in clinics would indicate the respondent had one visit through a routine appointment and 99 visits on a walk-in basis.

However, other utilization questions showed the respondent had not accessed care 100 times in the past year.

Another ambiguous area seemed to be items 40-43 which were used to determine the overall satisfaction variable. Over 50 percent of the respondents agreed or strongly agreed with the statement "I am very satisfied with the health care I receive at Kimbrough". Over 50 percent of the respondents also agreed or strongly agreed with the statement "I am dissatisfied with some things about the health care I receive at Kimbrough", while only 32 percent disagreed or strongly disagreed with that statement. Since these questions are in opposition, this researcher expected similar frequencies between the opposite ends of the rating scale. Some of the respondents may have read the questions too quickly or confused the rating scale.

A large number of respondents (189) left the questions on finances blank. Respondents may have found it difficult to relate financial considerations to their health care experience in the military setting since outpatient health care in military treatment facilities is provided at no cost to the patient. Measurements of financial satisfaction may not be an appropriate predictor of overall satisfaction in military health care settings at this time. However, with the proposed TRICARE military health services with related fees, financial

satisfaction may become a better predictor of overall satisfaction.

Several respondents took the time to say "thank you" for offering them the opportunity to voice their opinion about the health care they had received at Kimbrough. One respondent enclosed a thank you note addressed to the hospital commander.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

The purpose of this study was to measure the satisfaction of patients who use the outpatient services at Kimbrough in order to provide information for decision making and planning. This study focused on examining the relationships between overall satisfaction and the eight major dimensions of patient satisfaction (access, physical environment of facility, finances, interpersonal care, communications, choice and continuity, technical quality, and outcomes). The information gathered will be an important baseline measure to compare attitudes as Kimbrough prepares for managed care initiatives. The high satisfaction with physical environment and facility may change as renovations and relocations occur. The results of this study will also give decision makers evidence for improving services at Kimbrough.

As the results indicate, Kimbrough Army Community Hospital could improve patient satisfaction by first focusing on improving outcomes or patient's perception of outcomes and overall quality of health care (items 38 and 39). Interpersonal care (items 22 through 28) should also be the focus of organization-wide improvements.

Other studies have shown that these two dimensions are linked (Roter and Hall 1992, 147). Improving interpersonal relations between the health care provider and patient can improve the outcome of an episode of care. For example, patients who are given more information and more positive talk by doctors who exhibit attributes of care and humanness are more likely to comply with their treatment regimen (Roter and Hall 1992, 140). Researchers believe "the therapeutic potential of medicine can be enhanced--diagnosis made more accurate, treatment more effective, recovery faster and less painful, and quality of life more fully realized" when the doctor-patient relationship is enhanced (Roter and Hall 1992, 173).

Educating patients on what questions to ask their health care provider and raising the awareness of the health care providers as to the benefits of improved relations could be a starting point for improving patient satisfaction with both the outcomes and the interpersonal care dimensions.

According to this study, the population military treatment facilities were designed to serve is the least satisfied -- the active duty population. Kimbrough would benefit from programs to improve the satisfaction of active duty and their family members. "As patienthood takes on more consumerist qualities, and the medical system becomes more competitive, health care will cater more to what its managers believe patients want" (Roter and Hall

1993, 132). In order for Kimbrough to be successful in implementing managed care initiatives, Kimbrough's patients must be satisfied.

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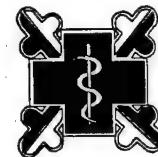
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"Personalized Care for the Military Family"

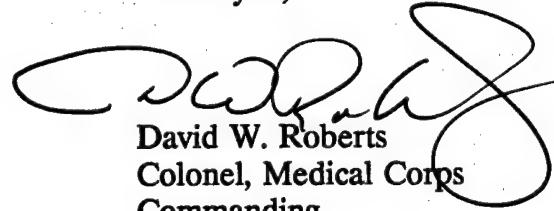
THE KIMBROUGH ARMY COMMUNITY HOSPITAL PATIENT SATISFACTION SURVEY

Invitation to Shape Your Hospital

Our job at Kimbrough is to ensure our military members are kept healthy and all of our beneficiaries have high value health care that is easily accessible. We do this by offering outpatient services, same-day surgery, emergency services and acute care hospitalization. In all of our duties we strive to make our customers satisfied.

Today we need your help to evaluate and shape our *outpatient* services. Please take a few moments to give us your thoughts.

Thank you,



David W. Roberts
Colonel, Medical Corps
Commanding

PATIENT SATISFACTION SURVEY

We are very interested in how you feel about the health care you have received. Please answer the following questions to the best of your recollection. Your responses will be held in the strictest confidence. The information you provide will help us decide how to improve the way you receive health care at Kimbrough. If you have any questions about this survey, please contact Captain Marsha Patrick, Administrative Resident, at (301) 677-8181 or by writing to Commander, Kimbrough Army Community Hospital, ATTN: MCXR-DCA (CPT Patrick), Fort George G. Meade, MD 20755-5800. Thank you.

Please note: This survey will refer to a health care provider rather than a doctor or physician. A health care provider is someone you receive health care from -- doctor, nurse, physician's assistant, psychologist, nurse practitioner, physical therapist, etc.

1. How long have you personally used Kimbrough for health care? (Please circle your response.)

- 1 Less than one year
- 2 One to two years
- 3 Three or more years

2. Overall, how would you evaluate the health care at Kimbrough? (Please circle the response that best describes your opinion.)

- 1 Poor
- 2 Fair
- 3 Good
- 4 Very Good
- 5 Excellent

3. In the past 12 months, what percent of your health care have you received through the following sources:

Kimbrough Army Community Hospital	_____ %
Other Military Treatment Facilities	_____ %
CHAMPUS	_____ %
Private Insurance or Other Sources	_____ %
	100%

Thinking about your own health care, please circle the number that best expresses your opinion of Kimbrough using the following response scale:

1 = Poor
2 = Fair
3 = Good
4 = Very Good
5 = Excellent
NA = Have Not Used

ACCESS -- Arranging For and Getting Care.

4. Convenience of location of Kimbrough	1	2	3	4	5	NA
5. Convenience of hours	1	2	3	4	5	NA
6. Access to health care whenever you need it	1	2	3	4	5	NA
7. Access to a specialist if you need one	1	2	3	4	5	NA
8. Access to inpatient hospital care if you need it	1	2	3	4	5	NA
9. Access to medical care in an emergency	1	2	3	4	5	NA
10. Help with arrangements to get the health care you need	1	2	3	4	5	NA
11. Ease of making appointments for health care by phone	1	2	3	4	5	NA
12. Length of time you wait at the office to see the health care provider	1	2	3	4	5	NA
13. Length of time you wait between making an appointment for routine care and the day of your visit	1	2	3	4	5	NA
14. Availability of health care information or advice by phone	1	2	3	4	5	NA
15. Services available for getting prescriptions filled	1	2	3	4	5	NA

**1 = Poor; 2 = Fair; 3 = Good; 4 = Very Good;
5 = Excellent; NA = Have Not Used**

PHYSICAL ENVIRONMENT OF FACILITY

16. Overall cleanliness of the facility	1	2	3	4	5	NA
17. Location of services and clinics you most frequently visit	1	2	3	4	5	NA
18. Comfort and pleasantness of waiting rooms and treatment areas	1	2	3	4	5	NA
19. Ease of finding the clinic or service you need to visit	1	2	3	4	5	NA

FINANCES

20. Protection you have against hardship due to medical expenses	1	2	3	4	5	NA
21. Staff's sensitivity to the financial impact of the care we assisted you in finding from another source	1	2	3	4	5	NA

INTERPERSONAL CARE

22. Courtesy shown to you by health care providers	1	2	3	4	5	NA
23. Courtesy shown to you by administrative staff (eg., receptionists)	1	2	3	4	5	NA
24. Health care providers' personal interest in the outcome of your problem	1	2	3	4	5	NA
25. Provider's concern for you as a person	1	2	3	4	5	NA
26. Provider's concern for your privacy	1	2	3	4	5	NA
27. Reassurance and support offered to you by health care providers	1	2	3	4	5	NA
27. Amount of time spent with health care providers during a visit	1	2	3	4	5	NA

**1 = Poor; 2 = Fair; 3 = Good; 4 = Very Good;
5 = Excellent; NA = Have Not Used**

COMMUNICATIONS

29. Provider's explanation of health care procedures	1	2	3	4	5	NA
30. Provider's explanation of medical tests	1	2	3	4	5	NA
31. Advice provider gives you about ways to avoid illness and stay healthy	1	2	3	4	5	NA
32. Attention provider gives to what you have to say	1	2	3	4	5	NA

CHOICE AND CONTINUITY

33. Ability to choose health care providers	1	2	3	4	5	NA
34. Ease of seeing the health care provider of your choice	1	2	3	4	5	NA

TECHNICAL QUALITY

35. Thoroughness of examination	1	2	3	4	5	NA
36. Skill of health care providers	1	2	3	4	5	NA
37. Thoroughness of treatment	1	2	3	4	5	NA

OUTCOMES

38. The outcomes of your health care (how much you are helped)	1	2	3	4	5	NA
39. Overall quality of health care	1	2	3	4	5	NA

Please indicate how much you agree or disagree with each statement about Kimbrough using the following rating scale:

PLEASE NOTE THAT THE RATING SCALE HAS CHANGED.

- 1 = Strongly Agree**
- 2 = Agree**
- 3 = Not Sure**
- 4 = Disagree**
- 5 = Strongly Disagree**

40. I am very satisfied with the health care I receive at Kimbrough	1 2 3 4 5
41. There are some things about the health care I receive at Kimbrough that could be better	1 2 3 4 5
42. The health care I have been receiving at Kimbrough is just about perfect	1 2 3 4 5
43. I am dissatisfied with some things about the health care I receive at Kimbrough	1 2 3 4 5

For the following questions, please circle the number of the answer that best indicates your response.

42. If you do not receive the majority of your health care at Kimbrough, which reason (or reasons) explains why not? (Please circle all that apply.)

NA I receive a majority of my health care at Kimbrough

1 Kimbrough lacks the services I need

2 Kimbrough is not located in a good place

3 Kimbrough personnel have been rude to me

4 Providers are not very thorough in their examinations

5 I do not get to see the same provider each time

6 My schedule conflicts with the times that Kimbrough offers care

7 I live too far from Kimbrough

8 It's too hard to get an appointment

9 I wait too long to see a provider

10 I was referred or sent by Kimbrough to a civilian facility

11 I simply prefer another source of care

12 Some other reason (specify)

43. During the last 12 months, how many outpatient visits did you and other members of your family have at Kimbrough? (Please circle one response in each column.)

You Personally

1 None

2 One visit

3 Two to four visits

4 Five to nine visits

5 Ten or more visits

Other Family Members

1 None

2 One visit

3 Two to four visits

4 Five to nine visits

5 Ten or more visits

NA No other family members

44. During the last 12 months, how many admissions (stayed *overnight* as a patient) did you and other family members of your family have at Kimbrough? (Please circle one response in each column.)

<u>You Personally</u>	<u>Other Family Members</u>
1 None	1 None
2 One visit	2 One visit
3 Two to four visits	3 Two to four visits
4 Five to nine visits	4 Five to nine visits
5 Ten or more visits	5 Ten or more visits
	NA No other family members

45. How long do you usually have to wait between the time you make an appointment for care and the day you actually see the provider at Kimbrough?

- 1 Two days or less
- 2 Three days to one week
- 3 One or two weeks
- 4 Three to four weeks
- 5 Five to six weeks
- 6 Seven or more weeks
- 7 I have not used the appointment system at Kimbrough

46. How long do you usually have to wait past your appointed time to see your provider when you have an appointment?

- 1 Less than 10 minutes
- 2 10 to 15 minutes
- 3 16 to 30 minutes
- 4 31 to 45 minutes
- 5 46 to 60 minutes
- 6 More than 60 minutes
- 7 I have not used the appointment system at Kimbrough

47. How long do you usually have to travel to Kimbrough?

- 1 Less than 10 minutes
- 2 10 to 15 minutes
- 3 16 to 30 minutes
- 4 31 to 45 minutes
- 5 46 to 60 minutes
- 6 More than 60 minutes

48. How would you characterize the majority of your visits to Kimbrough? (Please circle one response.)

- 1 Minor illness and injury (colds, flu, strained back, etc.)
- 2 Chronic condition (high blood pressure, diabetes, etc.)
- 3 Emergency

49. How often do you see the same provider for those visits?

- 1 Always
- 2 Most of the time
- 3 About half the time
- 4 Sometimes
- 5 Rarely or never

50. Please indicate how many times you visited each clinic in the past 12 months.

General Outpatient	0	1	2	3	4	5	6	7	8	9	10	11+
Internal Medicine	0	1	2	3	4	5	6	7	8	9	10	11+
Pediatrics	0	1	2	3	4	5	6	7	8	9	10	11+
Gynecology	0	1	2	3	4	5	6	7	8	9	10	11+
Orthopedics	0	1	2	3	4	5	6	7	8	9	10	11+
Mental Health	0	1	2	3	4	5	6	7	8	9	10	11+
Ear, Nose and Throat	0	1	2	3	4	5	6	7	8	9	10	11+
Optometry	0	1	2	3	4	5	6	7	8	9	10	11+
Physical Therapy	0	1	2	3	4	5	6	7	8	9	10	11+
Other _____	0	1	2	3	4	5	6	7	8	9	10	11+

51. What percent of the time have you accessed health care at Kimbrough by the following means:

Walk-in	_____ %
Same-day appointment	_____ %
Routine appointment	_____ %
	100%

NEW SERVICES

***How much would you use the following new services if they were available at Kimbrough?
Please use the following rating scale.***

- 1 = Always**
- 2 = Most of the time**
- 3 = About half the time**
- 4 = Sometimes**
- 5 = Rarely or never**

52. A customer service window located near the outpatient lobby	1	2	3	4	5
53. Evening hours for routine clinics	1	2	3	4	5
54. Ask-A-Nurse service that would offer medical advice about specific complaints over the phone	1	2	3	4	5
55. Routine clinics open on weekends	1	2	3	4	5

Tell us about yourself . . .

Male Female

Age _____

56. What is your personal health status?

- 1 Excellent
- 2 Very good
- 3 Good
- 4 Fair
- 5 Poor

57. Which of the following best describes your racial background?

- 1 White
- 2 Black/African-American
- 3 Indian (American)/Native American
- 4 Eskimo
- 5 Aleut
- 6 Asian or Pacific Islander
- 7 Other (specify) _____

58. Are you of Hispanic origin?

- 1 Yes
- 2 No

59. Specify your own pay grade if you are active duty or retired, or the pay grade of your sponsor if you are a family member. (Please circle only one response.)

1 E1	10 WO1	14 O1
2 E2	11 CW2	15 O2
3 E3	12 CW3	16 O3
4 E4	13 CW4	17 O4
5 E5		18 O5
6 E6		19 O6
7 E7		20 O7+
8 E8		
9 E9		

60. What is (or was) your branch of military service or the branch of your sponsor if you are a family member?

- 1 Army
- 2 Navy
- 3 Air Force
- 4 Marine
- 5 Coast Guard

61. Which category of beneficiary best describes you?

- 1 Service member on active duty
- 2 Family member of active duty service member
- 3 Retired service member
- 4 Family member of retired service member
- 5 Family member of deceased service member

62. Which of the following best describes your current marital status?

- 1 Never married
- 2 Married
- 3 Separated
- 4 Divorced
- 5 Widowed

We are interested in what you think. The following questions are optional but we would appreciate any additional information you would like to provide us or comments you would like to make.

What two things do you like the most about Kimbrough?

What two things might we improve at Kimbrough?

Any additional comments you would like to make.

*Thank you for your cooperation
and for helping us to care!*

Please place this survey in the enclosed self-addressed, pre-paid envelope and mail to:

Commander, Kimbrough Army Community Hospital
ATTN: MCXR-DCA (CPT Patrick)
Fort George G. Meade, MD 20755-5800